



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

the utmost cannot exceed twenty miles, consisting of an entirely level flat, and probably of alluvial soil. The level of the Chad and that of the river Binué, near Gewé, where it is joined by the Mayo Kebbi, seems to be almost identical; at least according to all appearance, the Binué at the place mentioned, is not more than 850 or 900 feet above the level of the sea.

"The regular second rise in the Binué which overtook the *Henry Venn* on the 14th of September, would be explained by the draining of the waters through the Mayo Kebbi, caused by the highest rise in the Chad, which occurs in August. This, taken with the vast volume of the water which the rivers pour down, flooding the land for miles, seems to show its connection with a great system.

"Important results to the continent of Africa might follow an effort carefully made to rectify the apparent irregularities of the Shary. If only a portion of the enormous volume of water which is now absorbed and evaporated in the vast expanse of Lake Chad were turned into the Binué, through the Mayo Kebbi, not only would such steamers as the *Henry Venn* have access to that great lake, but they could probably ascend the Shary and Welle almost up to the territories of Munza, King of the Monbuttu."

Meteorological observations were taken on the *Henry Venn* four times during the day. There were no night records. Owing to the steadiness of the atmosphere, the daily variations of the barometer never amounting two-tenths of an inch when the vessel was at anchor, the approximate elevation of the highest point reached may be stated with some approach to accuracy at 624 feet above the level of the Niger at Lukoja.

This makes the average fall of the river to its mouth fifteen inches per mile.

The maximum of the thermometer was 91° , and the minimum 74° . The daily range amounted to only 3° . The average temperature for the whole period of eighty days was 79° . The thermometer did not rise to 80° in fifty-four days, and only reached 75° in nine days while the highest point was only attained once. Rain occurred on twenty-eight days and lightning on twenty-one days.

MICROSCOPY.¹

HOLMAN'S NEW COMPRESSORIUM AND MOIST CHAMBER.²—In working with living animal forms suitable for the elucidation of some of the principal doctrines of life, any contrivance which will render the study easier, and hence more profitable and economical of time, should be hailed with delight by the working microscopist. Such a labor-saving device is represented in the accompanying cut, Fig. 1, of Mr. D. S. Holman's new compressor. This apparatus differs from all other compressors in being so arranged that the mica cover is fixed and immovable, while the lower, thicker plate of glass is moved up and down by means of a screw nut and spiral spring, an arrangement which enables the student to adjust the apparatus so as to apply *with certainty* any degree of pressure upon any soft object without risk of breaking large and expensive cover glasses, crushing the object unex-

¹ This department is edited by Dr. R. H. Ward, Troy, N. Y.

² Advance sheets from Journal Franklin Institute for August, 1880.

pectedly, or injuring high-power lenses. The writer by its means was enabled to study with great deliberation and certainty, the

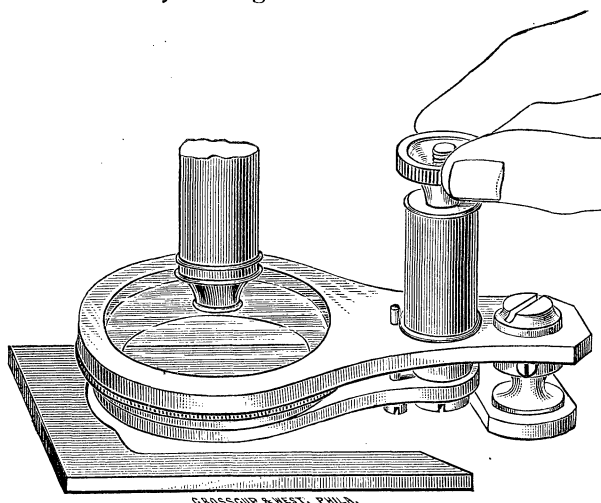


FIG. 1.

internal anatomy of the larva of the plumed crane-fly (*Corethra plumicornis*). In this case the pressure could be so nicely adjusted as not to disturb in the slightest degree the normal physiological actions of the larval fly; the physiological action of the heart could be readily studied, as well as the significance of the so-called apolar ganglion cells of that organ. Every life process, in short, was visible through the transparent body of the creature, so that if *well* studied by the help of this apparatus, the student will have acquired a mental image or epitome of the morphology and physiology of that great group of jointed animals, the insects.

Equally good results were got by its use in studying the embryology of the shad, where it revealed to the writer, and for the

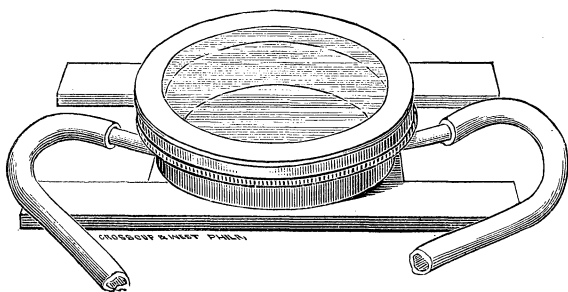


FIG. 2.

first time to science, the presence of a so-called polar vesicle in the earliest stages of development.

In Fig. 2 we have a combination of the familiar animalcule cage

and the siphon slide, also designed by Mr. Holman. The edge of the cover or cap is beveled, so that by rotating it against the inflow and outflow tubes of the siphon arrangement, a very convenient and effective compressor is obtained. The apparatus is equally as valuable as the compressor before described, because of the certainty with which one can gauge the amount of pressure which is applied; also on account of the facility with which water may be renewed in it when used as a "moist chamber" for studying growing fungi, without in the slightest degree disturbing these delicate plants. The value of the apparatus is further enhanced by the facility with which it may be used as a siphon slide for keeping aquatic larvæ, worms, etc., alive for a lengthened period for study or exhibition. It is equally useful as a dry compressor for holding, studying and drawing minute soft-bodied insects in the living state. These useful pieces of apparatus should be found upon the table of every working microscopist, where every day's use will demonstrate their indispensibility. It was in one of Mr. Holman's siphon slides, right under the microscope, that the writer successfully hatched young shad, a feat never before performed with the eggs of fishes.—*John A. Ryder.*

METHODS OF DRY MOUNTING.—Slides made of wood are lighter and stronger than glass ones, and look quite as elegant if made of ornamental wood and polished, or covered with fancy papers. In the first place procure some thin boards, about one-sixth or one-eighth part of an inch thick; these should be cut up into strips three inches long and one inch wide, and ground smooth with sand paper. In the center of these slips burn a hole to the required depth by means of a heated iron rod. I consider that this is a very good way of making a cell in the wood, as it leaves the surface black, and if the iron is carefully used it makes the bottom of the cell beautifully even. Into this cell drop a little thin liquid glue (which is made of shellac dissolved in methylated spirit), and with a small brush spread it all over the interior of the cell, and some little distance round the margin. This process has the very desirable effect of rendering the cell damp-proof. For small objects a circular piece of black or dark colored paper should be glued in the bottom of the cell, and the object (carefully dried) should be stuck in the center of the paper disc; if, however, the leaf with fungi has been cut sufficiently large to fill the bottom of the cell the paper circle may be dispensed with altogether. After another process of drying, the thin glass cover may be affixed by means of any of the various cements. * * * I venture to think that this method will be found to be equal, if not in some respects superior, to others in which the cell is built up on the slide, as there is no danger of the cell breaking off when roughly handled. * * * I believe wooden cells are often used for dry objects by many workers, but to those who have not yet given them

a trial, and especially to those who make a special study of that delightful branch of micro-botany, micro-fungi, I hope it will commend itself as a thoroughly efficient and simple method.—*George Clinch, in Science Gossip.*

—:o:—

SCIENTIFIC NEWS.

— Died, in Beverly, Massachusetts, Count Louis François de Pourtales. Count Pourtales was born in Neufchatel, March 4, 1823. He belonged to the Swiss branch of an old family which has branches also in France, Prussia and Bohemia. He was educated as an engineer, and came to this country about the same time as Agassiz, and became his fellow-worker and pupil. Upon the death of Agassiz the Count was appointed Keeper of the Museum of Comparative Zoölogy, which position he held at the time of his death. He had previously entered the service of the Government in the Coast Survey. His papers on the physical geography of the Caribbean sea and the Gulf stream established his reputation in Europe as well as in America. Through the death of his father he succeeded to his title, and received a fortune which gave him the opportunity of devoting himself wholly to his favorite studies. It is said that his modesty amounted almost to a fault, and that people wondered why a man who was the master of three languages should speak so little. With intimate friends, however, he would converse freely, and never without giving information and amusement. The Count was of strong frame, and his temperate mode of life gave hope of a long period of usefulness. He was stricken with a painful malady, and, after several weeks of great suffering, which he heroically endured, he died. His old friend and preceptor, Prof. Louis Agassiz, died seven years ago.

— The two first parts of a new botanical work by Dr. Dodelport, of Zurich, have just been published by Herr Cæsar Schmidt, of that city. The title of the work is "*Illustriertes Pflanzenleben*," and it promises to become one of unusual interest. In Part I the lower fungi are described in a popular manner. The author undertakes to popularize the results hitherto attained in our knowledge of putrefaction and contagion-fungi. He describes their forms, their size, and their manner of propagation; introduces the reader to their mode of life, and points out the danger arising to the human race from these minute organisms. The description is accompanied by two excellent plates, in one of which we recognize a reproduction on a small scale of a plate from the same author's famous "*Atlas der Botanik für Hoch und Mittelschulen*." Another chapter treats of miasma and contagions, and gives a